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MISSOURI'S

CONSOLIDATED STATE PLAN

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Improving America's Schools Act

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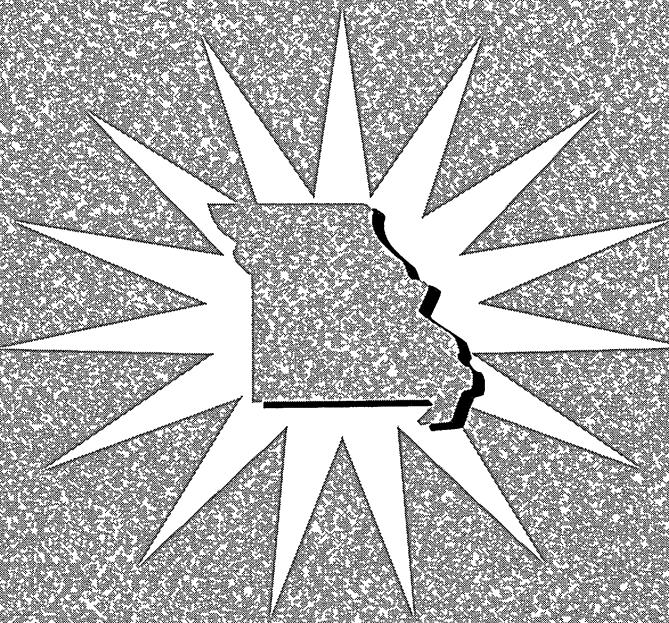
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MISSOURI'S CONSOLIDATED STATE PLAN

Improving America's Schools Act



Published by the Missouri State Board of Education

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PURPOSE

The purpose of the Consolidated State Plan is to support Missouri's state and local agencies in helping all students to meet the same high standards and to become productive citizens and lifelong learners. The plan facilitates coordination of most of the federal educational resources available for educational improvement.

INTRODUCTION**BACKGROUND**

Approximately one year before the Congress enacted the Goals 2000: Educate America Act (Goals 2000), Missouri enacted comprehensive educational reform legislation known as the Outstanding Schools Act (OSA). The OSA was developed in part to address the issues of educational funding equity and adequacy, thereby helping ensure equal access to curricular materials, learning technologies, and professional development for all school districts in the State. However, the OSA also contains many provisions designed to stimulate systemic reform in curriculum and instruction.

Many of the school improvement initiatives required by the OSA closely parallel those contemplated by Goals 2000 and by the Improving America's Schools Act (IASA). Each law strongly supports: the establishment of high academic performance standards; the development and dissemination of content standards through powerful state curriculum frameworks; the adoption of local curriculum that is congruent with the state frameworks; the development and implementation of a new, substantially performance-based assessment system; and a comprehensive system of preservice education for teachers in preparation and professional development for the current teaching force. Additionally, each of the laws in some way recognizes the importance of linking technology to education reform initiatives.

A Goals 2000 State Panel and a Technology Task Force developed a comprehensive State Improvement Plan (Show-Me State Plan) and a State Technology Plan (Show-Me Technology Plan). Those plans were adopted by the State Board of Education in December 1995 and February 1996, respectively. Similarly, the Governor's Partnership on School-to-Work Transition developed a plan that includes school-based learning, work-based learning, and connecting activities that bring students, parents, educators, employers, and labor together.

CONSOLIDATED STATE PLAN PROCESS

Three groups were convened to help with developing the Consolidated State Plan. One was a core group of staff representing the four divisions of the Missouri Department of Elementary and Secondary Education (DESE) which administer federal programs. This group planned and organized meetings for the other larger groups and edited materials as they were developed. The second group was comprised of federal programs staff from the Divisions of Vocational and Adult Education and Instruction. These staff represent all of the programs covered under this plan. This group identified strategies related to the plan to which DESE staff will commit over the next several years. Once the plan is approved, teams from these two divisions will develop activities and time lines and identify resources to implement the strategies. Finally, the State convened the Consolidated State Plan Committee representing the Governor's Office, State program officials, public and nonpublic school teachers and administrators, pupil services personnel, adult education administrators, and parents. About half of the state committee was comprised of individuals who previously served on other current statewide committees or task forces. Committee members' tasks were related to identifying the goals for federal programs and selecting appropriate strategies from the Show-Me Plans which would assist in achieving the goals.

GOALS, STRATEGIES, AND BENCHMARKS**THE STATE'S GOALS FOR ACADEMIC ACHIEVEMENT**

These goals and strategies are intended to enable the students covered under this plan to achieve the same high standards as all other students in the State. The strategies are taken directly from the Show-Me State Plans. The letters and numbers inside parentheses refer to the initiatives from the Show-Me Plan or from the Show-Me Technology Plan. The first letter identifies the plan—S=State Plan, T=Technology Plan. The second letter refers to the section of the State Plan—C=Curriculum and Assessment, P=Professional Development, G=Governance, H=Health and Human Services, I=Parent and Community Involvement. The third letter denotes whether the strategy is taken from the state initiatives or local initiatives—S=State, L=Local. The last number refers to the number of the initiative in the State Plan.

GOAL 1.

To help all children enter school ready to succeed as lifelong learners.

STRATEGIES:

1. Expand support for early childhood parent education and preschool programs to benefit all children (S-I-S-7, 11)
2. Develop and implement comprehensive family health programs, including full implementation of services under the Early Childhood Development Act (ECDA) (S-I-S-9; S-I-L-18)
3. Promote programs for parents, such as Practical Parenting Partnerships, as well as resource centers, literacy training, and support groups (S-H-L-5, 6, 33)
4. Provide comprehensive and integrated health/human services at school sites for families (S-H-L-28)
5. Encourage collaborative efforts and coordination of initiatives among schools and family support agencies, businesses, and other community organizations (S-H-S-7)
6. Conduct training and technical assistance for parents and early child care providers and educators (S-P-L-12)
7. Develop a systematic process for the transition from child care and preschool to kindergarten (S-C-L-75)
8. Provide developmentally appropriate curricula and activities training to parents, early child care providers, and educators through the primary grades (S-P-L-12)
9. Promote services for pre-school children in shelters (S-H-L-28)

Target Date	Outcome Measure	Baseline	Target Date	Outcome Measure	Baseline
June 2000	65% of eligible families are enrolled in the Parents as Teachers programs	1996–42%	June 2000	The number of public school students receiving a College Preparatory Studies Certificate is 15,200.	1996–11,638 certificates
June 2000	75 communities/sites are participating in Caring Community programs	1996–61 sites	June 2000	The statewide ACT Math score is 20.8.	1996–20.5
GOAL 2.					
<i>To help all learners meet Missouri's high content, performance, and skills standards.</i>					
STRATEGIES:					
1.	Adopt and implement Missouri's knowledge, performance, and skills standards (S-C-L-1)		June 2000	The statewide performance assessments will be in place for the following areas: Mathematics, Communication Arts, Science, Social Studies, Fine Arts, and Health/Physical Education.	1996–no assessments in place
2.	Develop curriculum frameworks aligned with Missouri's knowledge, performance, and skills standards (S-C-L-1)		June 2000	95% of SAHE-funded projects support the State Standards for mathematics and science.	1997 will be baseline year
3.	Develop and implement assessments aligned to Missouri's knowledge, performance, and skills standards (S-C-L-1)		June 2000	95% of SAHE-funded projects will train teachers to encourage the success of all students, especially those historically under-represented in mathematics and science.	1997 will be baseline year
4.	Provide state advisory teams to assist schools whose students are not meeting the state's high academic standards (S-C-S-27)		June 2000	95% of SAHE-funded projects provide sustained, intensive training (40 or more contact hours)	1997 will be baseline year
5.	Encourage the appropriate use of technology to improve teaching and learning (S-C-S-19)				
6.	Promote the role of teachers as facilitators of learning to assure the success of diverse learners (S-C-L-17)				
7.	Encourage the role of administrators as instructional leaders (S-C-S-21)				
8.	Provide professional development opportunities that are collaboratively designed, implemented, coordinated, and evaluated (S-P-L-1, 4, 11)				
9.	Promote supplementary academic services for identified homeless children (S-C-L-17)				

GOAL 3.

To encourage and facilitate family support services and parent and community participation in the education of their children.

STRATEGIES:

1. Convene a coalition of students, teachers, parents, religious leaders, political leaders, business leaders, the media, government, civic leaders, and others to provide input to schools and solicit support for school improvement (S-I-L-15)
2. Support a community-wide effort to write and adopt vision, mission, and educational goal statements to describe exactly how the school district will move toward higher student achievement (S-C-L-44)
3. Assist community members in gaining access to community services (S-C-L-59)
4. Encourage the expansion of educational opportunities for all parents that support their understanding of child development and parenting strategies with a special focus on health, wellness, and safety issues (S-H-S-2)
5. Recognize existing models for community and parent involvement and/or create new models adapted to meet local needs (S-I-L-5)
6. Make school-to-work opportunities a priority (S-C-S-2; S-C-L-3)
7. Implement a comprehensive guidance program to ensure that counselors work with all students, parents, and teachers to address individual student needs (S-C-L-22)
8. Provide parent resource centers and support groups that help parents cope with a variety of parenting issues (S-I-L-2)
9. Support family education programs for homeless families with children (S-H-S-2)

Target Date	Outcome Measure	Baseline
June 2000	126,000 citizens are members of the Missouri Parent-Teacher Association	1996–120,525 PTA members
June 2000	65% of eligible families are enrolled in the Parents as Teachers programs	1996–41%
June 2000	At least ten additional LEAs will annually implement Practical Parenting Partnerships.	1996–104 LEAs
June 2000	75 communities/sites are participating in Caring Communities programs	1996–61 sites

GOAL 4.

To increase the persistence to graduation rate and support programs and services for learners to reenter school or engage in alternatives to high school graduation.

STRATEGIES:

1. Develop and implement models for alternative learning approaches (S-C-S-5)
2. Actively support dropout prevention and student at-risk programs (S-C-L-48)
3. Identify, survey, and track dropouts and provide and activate programs to bring them back into the educational system (S-C-L-72, 73,74)
4. Each governmental body responsible for education and training will review, identify, and remove unnecessary policies and regulations that hinder the implementation of a flexible, customer-driven system of education which promotes graduation requirements (S-G-C-3)
5. Focus on new, successful approaches to teaching and assessment (S-P-L-5)
6. Develop a community planning team at each school site (S-H-L-21)
7. Develop and implement a statewide campaign to make lifelong learning a goal for every Missourian (S-I-S-1)

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Target Date	Outcome Measure	Baseline	
June 2000	The statewide high school graduation rate is 85%.	1995–72.8%	8. Provide training and technical assistance to parents, churches, schools, libraries, and others on prevention issues and ways to identify and support at-risk populations (S-H-L-9)
June 2000 GEDs	Each year 10,000 Missouri residents complete their GED.	1996–9,021	
June 2000	The statewide percentage of all 18- to 24-year-olds with a high school credential is 95%.	1993–90%	
GOAL 5.			
<i>To create safe, disciplined, and drug-free learning communities.</i>			
STRATEGIES:			
1.	Promote comprehensive school health programs (S-H-S-1)		
2.	Solicit community involvement and support for programs addressing such issues as drug abuse, dropouts, and violence to provide funds for programs (S-I-L-23)		
3.	Form a school/community advisory council to provide support for a comprehensive school health program that includes health services, health instruction, a wellness program, and a safe and healthy school environment (S-C-L-61)		
4.	Ensure a safe and drug-free school environment by developing policies regarding possession and use of drugs, possession and use of weapons, and sexual harassment (S-H-L-24)		
5.	Establish standardized codes of student conduct (S-I-L-13)		
6.	Involve students and parents in planning programs that will develop personal responsibility for contributing to a school environment that is safe and free of drugs and violence (S-H-L-34)		
7.	Identify and implement successful Family Services and support collaborative models (S-H-L-33)		
Target Date	Outcome Measure	Baseline	
June 2000	Not more than 5% of public high school students report using alcohol and/or marijuana at least once at school during a given 30-day period.	1995–8% alcohol, 7% marijuana	
June 2000	Not more than 10% of public high school students report having had the opportunity to receive free or to buy an illegal drug on school property during a given 12-month period.	1995–20%	
June 2000	Not more than 8% of public high school students report carrying a weapon on school property in a given 30-day period.	1995–11%	
June 2000	Not more than 2% of public high school students report staying away from school because they do not feel safe.	1995–4%	
June 2000	Not more than 5% of public high school students report being involved in a physical fight on school property during the previous year.	1995–10%	

GOAL 6.	Target Date	Outcome Measure	Baseline
<i>To support responsive, lifelong learning environments to meet community needs.</i>	June 2000	40,000 citizens are enrolled in 12 or more hours of Adult Basic Education.	1995–34,010 citizens enrolled
STRATEGIES:	June 2000	1,400 incarcerated annually pass the GED	1996–1,103 GEDs
1. Develop and implement a statewide campaign to make lifelong learning a goal for every Missourian (S-I-S-1)	June 2000	398 school sites offer Community Education	1996–293 sites
2. Expand programs that serve learners from early childhood through retirement (S-I-S-2)	June 2000	60 local partnerships are operating School-To-Work programs	1995–15 partnerships
3. Develop and implement quality programs to serve the educational needs of part-time employees and workers who change jobs (S-I-L-10)	June 1998	98% of Missouri's LEAs are connected to MOREnet	1996–74% connected
4. Involve parents, teachers, students, and community leaders in the assessment of community needs (S-I-L-12)			
5. Use technology to create linkages to community colleges, colleges and universities, career education centers, vocational education institutions, business and industry, community and state agencies (T-L-E-1)			
6. Use existing coalitions of local, state, and national PTAs/PTSAs to provide information to parents on technological opportunities for home, community, and school use (T-L-E-2)			
7. Develop a community learning plan (T-L-E-4)			
8. Offer non-traditional time frames and learning environments to teachers, students, and the community through the use of technology (T-L-E-5)			
FUNDING MATRICES			
The following pages contain matrices to assist schools in identifying federal and state sources of funds to implement the listed strategies. The strategies are identified by number, under their respective Goal. The ✓ in the row beside the number identifies funding sources that may be used to assist in the implementation of the strategy. Please consult the project supervisor for specific funding details.			

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FUNDING MATRIX—GOALS 1, 2 ,3

	GOAL 1								GOAL 2								GOAL 3									
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
FEDERAL PROGRAMS																										
Goals 2000 State Grants	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Title I*	✓	✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓	✓	✓	✓	✓	
Title II—Professional Development	✓								✓	✓	✓						✓	✓	✓							
Title—IV-SDFSC	✓		✓	✓	✓																					
Title VI—Innovations																	✓	✓	✓							
Homeless Children & Youth																										
Vocational Education																										
JTPA																										
JTPA—Dislocated																		✓								
FUTURES																				✓						
Learn & Serve																	✓	✓	✓		✓					
School-to-Work Planning																	✓	✓	✓	✓	✓					
Vocational* Title II—Part C																	✓	✓	✓		✓					
Vocational* State/Federal Leadership																										
Vocational* Rehab. Leadership																										
Vocational* Rehab. Tech. Prep.																	✓	✓	✓							
Special Education—K-12	✓																✓	✓	✓	✓	✓					
IDEA—Part H	✓		✓																							
IDEA—Professional Development	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Medicaid																										
Adult Basic Education																			✓	✓						
STATE PROGRAMS																										
Gifted Education																		✓	✓	✓						
Incentives for School Excellence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Video																										
Tech. Aquisition																										
Competitive Tech.																										
Instructional Tech. Entitlement																										
Instructional Tech. Endeavor																										
Parents as Teachers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Professional Development (Local)																										
SB 380 ESL Support Grants																										
SB 380 FL Support Grants																										
A+ Schools																										
Caring Communities																										
Special Education—Early Childhood																										

* Title I includes: LEA, By Pass, Capital Expenses/Priv., Program Improvement, Even Start, Migrant/Part C, Neglected/Delinquent

* Vocational Includes: Industrial Education, Agricultural Education, Business Education, Family and Consumer Science Education, Marketing and Cooperative Education

FUNDING MATRIX—GOALS 4, 5, 6

	GOAL 4							GOAL 5							GOAL 6								
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
FEDERAL PROGRAMS																							
Goals 2000 State Grants	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Title I*	✓	✓	✓	✓	✓	✓	✓									✓	✓						✓
Title II—Professional Develop.																							
Title—IV-SDFSC	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓								
Title VI—Innovations	✓															✓							
Homeless Children & Youth	✓																	✓					
Vocational Education	✓	✓	✓													✓							
JTPA		✓																✓	✓				
JTPA—Dislocated																			✓				
FUTURES	✓	✓	✓													✓							
Learn & Serve	✓	✓														✓							
School-to-Work Planning	✓	✓															✓	✓	✓	✓	✓	✓	✓
Vocational* Title II—Part C	✓	✓																			✓	✓	✓
Vocational* State/Federal Leadership	✓																						
Vocational* Rehab. Leadership	✓																						
Vocational* Rehab. Tech. Prep.																					✓	✓	✓
Special Education—K-12	✓		✓																				
IDEA—Part H																							✓
IDEA—Professional Development	✓		✓		✓											✓							
Medicaid			✓		✓											✓	✓						
Adult Basic Education								✓									✓	✓					
STATE PROGRAMS																							
Gifted Education	✓	✓			✓		✓									✓			✓				
Incentives for School Excellence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Video																				✓	✓	✓	
Tech. Aquisition																				✓	✓	✓	
Competitive Tech.																				✓	✓	✓	
Instructional Tech. Entitlement																				✓	✓	✓	
Instructional Tech. Endeavor																				✓	✓	✓	
Parents as Teachers																✓			✓	✓			
Professional Development (Local)																							
SB 380 ESL Support Grants																							
SB 380 FL Support Grants																							
A+ Schools																					✓	✓	✓
Caring Communities																✓	✓	✓	✓	✓	✓	✓	
Special Education—Early Childhood																✓							

* Title I includes: LEA, By Pass, Capital Expenses/Priv., Program Improvement, Even Start, Migrant/Part C, Neglected/Delinquent

* Vocational Includes: Industrial Education, Agricultural Education, Business Education, Family and Consumer Science Education, Marketing and Cooperative Education

Standards and Assessments

Over the next several years, Missouri Schools will be transitioning from the current assessment system to the State's new system based on performance standards and assessments. Missouri school districts are required to have a written assessment plan.

Missouri's statewide testing program requires that every public school student's achievement be assessed at least once during each school year from grades 2 - 6. Each district's assessment program must include administration of a Department-approved, criterion-referenced achievement test in the areas of reading/language arts/English, mathematics, science, and social studies/civics in at least two non-consecutive grade levels in grades 2 - 6 and in at least two non-consecutive grade levels in grades 7 - 10. (Standardized assessment at grade 2 may be limited to reading and mathematics.) Most districts use the state-developed Missouri Mastery and Achievement Tests (MMAT).

Additionally, a comprehensive on-site review of each district's progress toward meeting the Missouri School Improvement Program (MSIP) process and resource standards is made every five years. Part of the review includes the district's demonstrated success on the MMAT and other measures of student performance. All districts are evaluated on their success on items 1 and 2 listed below, but districts may select from additional items as part of their performance evaluation. As the Show-Me Standards and performance assessments are phased in, the MSIP will be revised. The current MSIP performance standards are:

GENERAL ACADEMIC ACHIEVEMENT

The district uses DESE-approved standardized achievement tests closely aligned with the curriculum and instruction to measure the degree to which students have mastered the knowledge and skills in the curriculum. The district's students achieve a high level

of performance or demonstrate improvement in performance.

1. The percentage of MMAT-tested key skills mastered by the median student increases or is maintained at a high level or students' scores on Department-approved achievement tests, other than the MMAT, increase or are maintained at a high level.
2. The percentage of students scoring in the two highest quintiles on the MMAT increases or is maintained at a high level, while the percentage of students scoring in the two lowest quintiles decreases or is maintained at a low level.
3. The percentage of students who attain the graduation outcomes that have been identified by the district increases or is maintained at a high level.
4. The percentage of students who demonstrate competence on a writing assessment increases or is maintained at a high level.

Other measures of Missouri students' academic success include the National Assessment of Educational Progress (NAEP), Trial State Assessment (NAEP-TSA), the American College Testing (ACT) program, the Scholastic Aptitude Test (SAT), the Preliminary Scholastic Aptitude Test (PSAT), General Education Development (GED) tests, and Advanced Placement (AP) assessments. DESE also participates in the International Mathematics and Science Studies. These assessments provide national and international references of the success of American and Missouri students.

STUDENT STANDARDS

The Outstanding Schools Act requires the State to develop knowledge, skill, and performance standards and to provide curriculum frameworks and assessments aligned with those standards. Over the past two years, educators, parents, and community members have been involved in all stages of the standards

and frameworks development. In January 1996, the State Board of Education adopted the Show-Me Standards in the areas of Communication Arts, Mathematics, Science, Social Studies, Fine Arts, and Health/Physical Education. Curriculum frameworks, curricular models, and assessments aligned with the standards are being developed.

As a result of the Outstanding Schools Act, Missouri developed a three-pronged approach to improve the academic achievement of all students. A rigorous set of 73 academic performance standards, the Show-Me Standards, (Appendix A), outline what students should know and be able to do to successfully advance through Missouri's public elementary and secondary schools. State-developed curriculum frameworks (sample provided in Appendix A) drafted in the six content areas of mathematics, communication arts, fine arts, science, health/physical education, and social studies will serve as resource guides to help districts align their curriculum to the standards. The frameworks will also help benchmark the state assessment. Use of the state-developed curriculum frameworks is optional, but districts have one year after approval of the curriculum frameworks to develop a curriculum plan aligned to the Show-Me Standards. It is expected that the frameworks will be presented to the State Board of Education by September 1996.

THE NEW ASSESSMENT SYSTEM

A Technical Design Committee on Curriculum Frameworks and Assessment System developed specifications for the frameworks and for the assessment system based upon the policy analysis and advice of the Advisory Committee on Curriculum and Assessment Policy. These specifications will help assure the linkage of the performance standards and the assessment system. They will also: 1) help assure the design of an assessment system that involves multiple measures of student performance, 2) assure consistency with nationally recognized professional and technical standards for assessment, 3) make accommodations for the participation of students with di-

verse learning needs, and 4) support improvement in curriculum and instruction.

The design of the new assessment system includes both criterion-referenced and performance-based assessments. A sample of the new assessment system is included in Appendix A. The revised system is intended to assess how effectively students learn, integrate, and apply knowledge and skills that are useful both within and beyond the classroom. By providing meaningful and unambiguous feedback to students, parents, teachers, and administrators, the revised assessment system will support learning and instruction that empower all students to become productive citizens and lifelong learners.

Performance-based assessments in the four subject areas tested by the MMAT will be phased in to replace corresponding sections of the MMAT over the next four years. In addition, assessment in fine arts and health/physical education will become a part of the statewide program. Statewide assessments are expected to be administered for students at grades 4, 8, and 10. The timeline for development and implementation of the revised assessment system is as follows:

Subject	Pilot/Field Test	Implementation
Math	Spring/Fall—1996	Spring—1997
Reading/ Communication Arts	Spring/Fall—1997	Spring—1998
Science	Spring/Fall—1997	Spring—1998
Health/Physical Education	Spring/Fall—1998	Spring—1999
Fine Arts	Spring/Fall—1998	Spring—1999
Social Studies	Spring/Fall—1999	Spring—2000

ADEQUATE YEARLY PROGRESS

In the base year of testing using the MMAT, the distribution of scaled scores was divided so that 20 percent of the scores fell into each quintile. The set

points resulting from that distribution have been kept and will remain constant. With the reasonable assumption that Title I children fall predominantly in the two lowest quintiles, academic achievement success for students served under Title I can, therefore, be gauged by viewing the percentage of students moving out of either of those two lowest quintiles and movement into any of the upper three quintiles.

For any year during the transition period when compared to the prior year, schools will be required to demonstrate at least a five percent (5%) increase in the composite percentage of students in the upper three quintiles (1st, 2nd, and 3rd) and at least a five percent (5%) decrease in the fifth (5th) quintile percentage or at least a twenty percent (20%) decrease in the percentage of students appearing in the fifth (5th) quintile percentage at schools in which at least forty percent (40%) of the class group is represented in the fifth (5th) quintile.

Adequate yearly progress will be redefined once assessment standards are firmly established under the content sections of the new assessment system. Districts will be given the choice as to which system to use until 1999 when the new system becomes mandatory.

STRATEGIES, ACTIVITIES, AND USE OF RESOURCES

STATE SUPPORT: COORDINATING BOARD

The State Agency for Higher Education (SAHE) component of Missouri's Eisenhower program is focused on goal two of the State's plan: to help all learners meet Missouri's high content, performance, and skills standards. The SAHE Eisenhower grant program provides funds to colleges, universities, and non-profit organizations for projects that provide sustained, intensive, high-quality professional development for teachers in mathematics and/or science. The projects funded through the SAHE Eisenhower grant competition re-

flect the current priorities of state educational planning. Funded projects are expected to:

- be tied to state standards for student academic performance
- actively involve teachers for the local school district(s) to be served in planning the subject content and activities of the project
- reflect recent research on teaching and learning
- include strong science or mathematics subject content
- include a strong pedagogical component
- incorporate activities and effective strategies for meeting the needs of historical underserved and underrepresented populations

While a waiver of the minimum funding requirement in mathematics and science has been requested for the SEA portion of Missouri's Eisenhower program, the SAHE program will remain focused on meeting professional development needs in mathematics and science at the present time. In consideration of the decreasing funding available both for grants and for administration through this program, and the increased administrative costs associated with any expansion to additional subject areas, Missouri has decided to postpone opening the SAHE program to other core subjects until the funding level for the program is significantly increased.

STRATEGIES AND ACTIVITIES

The federal programs units of the Missouri Department of Elementary and Secondary Education view the Consolidated State Plan as an opportunity to help create an effective unified and coordinated approach to education. The Department recently adopted a new mission statement, "Making a Positive Difference Through Education and Service." To fulfill the mission, federal programs staff are viewing and modifying their present organization, practices, and behav-

iors. From this review will come organizational and administrative strategies aimed at: 1) becoming more consumer-oriented, 2) coordinating programs, 3) helping schools identify and pool resources, 4) removing unnecessary barriers to effective school improvement, 5) increasing technical assistance, 6) improving communications, and 7) monitoring and evaluating our progress in implementing the state and local school improvement plans.

Part of our focus is to facilitate the processing of applications. Another part is providing technical assistance and suggestions to help program applicants focus their energies and attention on effective and coordinated efforts. Following are strategies that federal programs staff will act on in their support of schools.

The strategies are taken directly from the Show-Me State Plans. The letters and numbers inside parentheses refer to the initiatives from the Show-Me Plan or from the Show-Me Technology Plan. The first letter identifies the plan—S=State Plan, T=Technology Plan. The second letter refers to the section of the State Plan—C=Curriculum and Assessment, P=Professional Development, G=Governance, H=Health and Human Services, I=Parent and Community Involvement. The third letter denotes whether the strategy is taken from the state initiatives or local initiatives—S=State, L=Local. The last number refers to the number of the initiative in the State Plan.

In the process of identifying outcome measures and baseline data, no attempt was made to describe improvements in parenting as a result of participation in the Parents as Teachers (PAT) program or the Practical Parenting Partnership (PPP) program. Each of the programs has been evaluated for effectiveness in its own right, and the duplication of those evaluations is determined to be duplicative, expensive, and unnecessary.

GOAL 1.

Provide a safe and drug-free school environment for all children.

- Comprehensive safe and drug-free schools curriculum for all grades, all abilities (S-H-S-1)
- Communitywide health, wellness, and safety education (S-H-S-2 & 7; S-I-L-8)
- Encourage networking and involvement of community (S-I-L-23)

Target Date	Outcome Measure	Baseline
June 2000	Not more than 5% of public high school students report using alcohol and/or marijuana at least once at school during a given 30-day period.	1995–8% alcohol, 7% marijuana
June 2000	Not more than 10% of public high school students report having had the opportunity to receive free or to buy an illegal drug on school property during a given 12-month period.	1995–20%
June 2000	Not more than 8% of public high school students report carrying a weapon on school property in a given 30-day period.	1995–11%
June 2000	Not more than 2% of public high school students report staying away from school because they do not feel safe.	1995–4%
June 2000	Not more than 5% of public high school students report being involved in a physical fight on school property during the previous year.	1995–10%

GOAL 2

High-quality professional development enables teachers to teach effectively to challenging content standards.

- Parent involvement and education (S-I-S-7; S-I-L-2, 19)
- Develop professional development plans and provide resources and technical assistance (S-P-S-1, 5, 13)
- Support and expand Caring Communities models (S-H-S-4 & L-33)
- Provide expanded teacher support services (S-P-L-19)

Target Date	Outcome Measure	Baseline
June 2000	95 percent of LEAs have a professional development plan focusing on improved academic success for all students.	*
June 2001	95 percent of LEAs will have curriculum aligned with State Standards in six areas of the curriculum.	*
June 2001	10 Comprehensive Professional Development Centers will be in operation in the state.	1996–10 centers opened

* Baseline data will be collected in the 1996-97 school year.

GOAL 3

Eligible schools will establish schoolwide programs that include strategies for upgrading the entire educational program in the school.

- Improve communication and coordination and remove barriers (S-G-A, F, & G)
- Develop models that link the MSIP process and the schoolwide planning process (S-G-G)

Target Date	Outcome Measure	Baseline
June 1998	85% of the eligible schools that are not already schoolwide will attend a regional schoolwide planning workshop.	*
June 1998	75% of schools making a commitment to become schoolwide will access resources available from DESE.	*
June 1998	Research on effective schools will be made available to 100% of districts involved in the schoolwide planning process.	*
June 2001	Increases in achievement rates for minority students will be greater than achievement rates for non-minority students.	*

* Baseline data will be collected in the 1996-97 school year.

GOAL 4

Identify and remove State and district barriers to effective schoolwide change, including the fragmentation of federal programs and lack of adequate school-level decision making.

- Develop a consolidated or uniform federal programs application (S-G-C)
- Conduct program monitoring on the MSIP cycle (S-G-G)
- Encourage and support school/community partnerships (S-C-L-2 & 3)

GOAL 5

Increase parental and community involvement to support the academic success of all children.

- Increase school accessibility for all families (S-I-L-2)
- Encourage and support integrated parent/community/school collaboration (S-I-L-1)
- Support efforts to coordinate or consolidate the work of required local advisory groups

Target Date	Outcome Measure	Baseline
July 1998	A consolidated application for federal programs will be implemented.	1996-97—none*
July 1998	A Program Assistance Section will help schools to more effectively coordinate federal programs using the following priorities: districts that are provisionally accredited due to poor performance, districts that failed to make adequate yearly progress, districts with the greatest alcohol, tobacco, and drug risk factors	Section organized March 6, 1997
July 1999	Information and training on effective school-level decision making will be available to all schools and LEAs.	1996—none*

* Baseline data will be collected in the 1996-97 school year.

Target Date	Outcome Measure	Baseline
June 2000	At least ten additional LEAs will annually implement Practical Parenting Partnerships.	1996—104 LEAs
June 1997	95% of the LEAs have a board-adopted policy supporting parental involvement.	*
June 1998	100% of LEAs will develop and make available to the community a district report card that reports student academic success.	*
June 2000	65% of eligible families are enrolled in Parents as Teachers.	1996—41%
June 1999	Information will be readily available to LEAs on consolidation of local advisory groups.	1996—none

* Baseline data will be collected in the 1996-97 school year

GOAL 6

Subgrant applications for included federal programs will enable interested LEAs to develop their own consolidated plans so that all applications focus on improved teaching and learning.

- Establish teams (intersectional and interprogrammatic) to assist local districts to plan and implement consolidated efforts (S-G-C, F, G)

Target Date	Outcome Measure	Baseline
June 1998	A multi-year consolidated application will be developed that reduces justification, promotes flexibility, uses more assurances than detail, uses common guidelines and guidance, and is available on-line.	1996—application designed
June 1998	Staff will be trained to assist local districts to plan and implement consolidated efforts.	1996—training started
June 2000	100% of the LEAs will have developed a comprehensive plan for school improvement.	1997—planning model developed

GOAL 7

Provide technical assistance to LEAs and schools on best teaching practice and hold them accountable for the performance of their students.

- Promote inclusion of all students in the classroom (S-C-L-46)
- Develop DESE staff to provide appropriate technical assistance (S-P-S-13)
- Implement and enforce rigorous standards of adequate yearly progress (S-C-S-27)

Target Date	Outcome Measure	Baseline
June 1998	95% of the LEAs that are provisionally accredited due to poor performance or failing to meet adequate yearly progress will receive information and training based on current research about best practice.	*
June 1998	Adequate yearly progress will be defined and implemented in 100% of Title I LEAs.	*
June 1999	In 100% of the Title I LEAs, performance data will be disaggregated by: gender, major ethnic and racial group, limited English proficiency status, migrant status, students with disabilities (IEPs) compared to those without, economically disadvantaged students compared to those who are not	*
June 2000	50% of the LEAs provisionally accredited due to poor performance or failing to meet adequate yearly progress will be trained in using disaggregated data to improve instruction.	1996—none

* Baseline data will be collected in the 1996-97 school year.

RESOURCES

As part of its commitment to customer satisfaction and to the implementation of the State Plans and the Consolidated State Plan, the Department will, with the assistance of school personnel, implement a process for developing models for schools to use in coordinating federal and state resources to achieve the identified goals and strategies. This process should result in the development of practical, workable models for school improvement and the identification of barriers to coordination/consolidation. Funding matrices, which align strategies with state and federal program funding sources, are included in this plan. Similar matrices were included in the State Plans developed under Goals 2000.

Several initiatives are already under way in Missouri to coordinate federal, state, and local services and resources for families. Two prominent initiatives are Caring Communities and the Early Childhood Collaborative Planning initiative. Caring Communities is an interagency process supported by the Departments of Health, Mental Health, Social Services, and Elementary and Secondary Education. The process involves community collaboration for the effective, efficient delivery of multidisciplinary services to families through community linkages with local schools. Caring Communities helps make services responsive, accessible, and affordable. Services are coordinated and integrated so that the goals of one program do not impede the process or progress of another. Although the collaborative process and outcomes may be similar in all communities, the methods for achieving results are unique for each locale. Local latitude, design, and control are the hallmarks of the Caring Communities approach.

The Early Childhood Collaborative Planning initiative is intended to promote collaboration within and among the sections responsible for early child care and education in the Departments of Health, Mental Health, Social Services, and Elementary and Secondary Education. Each agency is expected to form an

interdivisional team and participate on an inter-agency team. Anticipated outcomes of the 18-month project are:

- A shared understanding of the services currently available to young children and their families;
- An open line of communication within and among the agencies and their partners;
- Improved insight into the needs of young children and their families;
- An improved method of service delivery based on a collaborative systems approach;
- An energized environment among the early childhood community;
- A system for recommending and promoting broad-scale changes within the context of a system; and
- A universal system of advocacy designed to impact early childhood practices and policies on a statewide basis.

Similar initiatives will be conducted by the Department's federal programs staff to develop collaboration plans and initiatives focusing on the goals and strategies outlined in this plan. Recent collaboration efforts between Title I and Special Education staff resulted in the development of models for encouraging the inclusion of students from Title I and Special Education.

WAIVERS

The Department recently requested waivers under Title II from the U. S. Secretary of Education. No additional requests are included in this plan, but others are anticipated as we develop uniform or consolidated applications.

CONTINUOUS IMPROVEMENT

Continuous improvement must be understood and embraced by the staff of all federal programs included in the consolidated plan. It is intended that over the next several months, teams comprised of staff representing the included programs will take the goals and strategies identified by the State Committee and by the federal programs unit and develop an internal plan of consolidated activities designed to successfully implement the strategies and meet the goals. The internal plan will restate each goal and strategy, describe the activities to collaboratively implement strategy, identify responsible staff, identify resources, establish benchmarks, and outline a timetable for completion. Once completed, these updates will be amended into this plan.

ONGOING REVIEW

Benchmarks have been selected for each of the overall plan goals and for some of the program-specific goals to help determine the effectiveness of the strategies, activities, and resources mentioned in this plan. Additional benchmarks, as deemed necessary, will be developed for program-specific goals as the internal plan of consolidated activities is developed. Staff will be provided a report of annual progress toward meeting the goals. The annual report will be developed in concert with the Goals 2000 progress report and disseminated statewide.

State law requires the Department to annually assess the degree to which students are meeting academic standards. The state assessment program provides for assessing a representative sample of students to gauge the State's overall academic progress. The planned new assessment system will assess students using a variety of formats. This should provide additional validity to the results. Further, school district progress (including the use of disaggregated assessment data) toward achieving academic success is reviewed as part of the MSIP classification system.

As part of its long-range planning under the MSIP, each district is required to develop written goals, evaluation measures, and strategies for improving the district's curriculum. The curriculum must:

- integrate the knowledge, skills, and competencies students need to meet the goals established by the district and the performance standards established by the state
- be articulated through the grade levels and subject areas to ensure continuity of learning
- provide alternative strategies and resources to meet the needs of all students

Schools are also required under the MSIP to continuously monitor student progress using a variety of assessment strategies. These assessment strategies include techniques for assessing how all students apply, in new situations, the skills and knowledge they have acquired.

Under the MSIP, local boards of education annually review test results and other indicators, consider recommendations, and take appropriate action to ensure that the curriculum and instruction for all student populations improve in effectiveness and efficiency. The boards must review performance data with regard to race/ethnicity, gender, and disabilities. Performance data includes achievement results, dropout rates, and other areas such as attendance rates, retentions, suspensions, vocational participation and placement, and follow-up data.

CONTINUOUS IMPROVEMENT

The Department's federal programs' teams established to develop the collaboration plans and activities will annually review benchmark data (including that related to safe and drug-free schools) to determine the level of success in meeting the goals. The teams will be given the responsibility for modifying or developing new activities based on the results of the benchmark data. In addition to data collected as part

of the evaluation process, teams will also use information obtained from observations they made or surveys they used as part of the monitoring process.

MAINTAINING PUBLIC INVOLVEMENT

The Department intends to convene a meeting of the people described under the section titled the "Consolidated State Plan Process" and those involved in developing the State Plans under Goals 2000. At this meeting, we will brief them on progress, provide copies of the progress report, and provide opportunities for members to suggest changes to the strategies or activities. Federal programs staff will have continuous involvement in implementing, reviewing, and modifying strategies and activities as part of the planning and implementation process.

CONSOLIDATED STATE ADMINISTRATION

Beginning April 1, 1996, the Missouri Department of Elementary and Secondary Education will pool the administrative funds for all covered programs listed in section 14201(a)(2) of the Improving America's Schools Act and those provided under section 308(c) of the Goals 2000: Educate America Act. The SEA believes this will facilitate the coordination of federal programs staff and allow staff to conduct crosswalk activities among the programs covered under this plan. The following amounts are anticipated to be included for administrative purposes:

Program	Amount
Part A of Title I	1,090,672
Part C of Title I.....	8,255
Title II	207,702
Part A of Title IV	250,839
Title VI.....	150,000
Goals 2000	100,000

The SEA confirms that a majority of its resources come from non-federal sources.

EQUITABLE ACCESS AND PARTICIPATION

STATE-LEVEL FEDERALLY FUNDED ACTIVITIES

The Department has reviewed equitable access and participation regarding the use of state-level federal funds including those from Titles II, IV, and VI to identify possible barriers and remedies to those barriers. State level funds are often used to assist teachers and administrators through conferences, workshops and training sessions. The identified barriers to equitable participation and steps to remove those barriers follow:

Teacher and administrator awareness of conferences and workshops

- publish and disseminate to schools an annual list of major conferences
- include conference and workshop information on the federal programs website

Distance to and costs to attend conferences and workshops

- when practical, host one-day drive-in regional conferences and workshops

Physical access for disabled participants

- check to see that all facilities used meet ADA standards
- Hearing impaired participants have signers available upon request

ADMINISTRATIVE PROCEDURES

The Department administers a variety of programs affecting schools. It is important that committees formed to advise the state regarding policies and program strategies be representative of the state as a whole. All state-level committees are and will continue to be reviewed to ensure they represent the diverse populations and geographic sections of the state. A balance is continuously sought to ensure representation of diverse populations; businesses; communities; parents; teachers; administrators; large and small schools; and urban, suburban, and rural schools.

During on-site visits and reviews, federal programs staff will be sensitive to verifying the equitable activities being observed in the school districts or other

participating entities. Technical assistance will be provided as variances are observed.

STATE-FUNDED ACTIVITIES

The State has taken several important steps to better assure educational equity. First, with enactment of the Outstanding Schools Act of 1993, the General Assembly put in place an equity-based foundation formula and has fully funded that formula. Second, the state has encouraged through policy and funding the expansion and use of technology for instructional purposes. Distance learning provides quality instruction in remote areas of the State, and the availability of information through the Internet provides a rich resource to all students.

Additionally, the Department is reviewing all aspects of the new state content and performance standards and assessments tied to those standards to see what reasonable steps can be taken to ensure equitability. All teacher/district support materials and items developed to support the state's content and performance standards and assessment system are scrutinized to remove cultural, racial, linguistic, and gender bias. The attention to fairness and the inclusion of a diverse range of stakeholders in the development of the system provides additional assurances against inequitable standards and assessments.

Several strategies are anticipated to accommodate the needs of special populations taking the new state assessments:

Visually impaired students

- portions of the test will be available in braille
- portions of the test will be available in large print

Limited English Proficient students

- portions of the state test or of a test comparable to the state test will be available in the prominent minority language
- an item bank with items in a variety of languages is planned for schools to use in local assessment of ESL students

LEA ACTIVITIES

The majority of funds coming to the state goes to LEAs. The state applies for those funds on behalf of the Department and of the LEAs. We therefore accept some responsibility for helping ensure equitable educational opportunities for all students.

To ensure equitability of instruction and services to all children, districts are required under the Missouri School Improvement Program (the program for school accreditation) to disaggregate performance data such as: academic achievement, attrition/drop-out rates, student placement, attendance rates, and retentions/suspensions/expulsions. Performance data is disaggregated based on race/ethnicity, gender, and disability. Districts must modify curriculum and instruction to address the needs identified through analysis of disaggregated data. Performance data are a major focus of the school accreditation process. The disaggregated data are also used to create a profile of the state's needs regarding equity and direct the use of state set-aside funds to addressing those deficiencies.

THE SHOW-ME STANDARDS

Authority for the Show-Me Standards: Section 160.514, Revised Statutes of Missouri, and the Code of State Regulations, 5 CSR 50-375.100

PERFORMANCE (PROCESS) STANDARDS

GOAL 1: Students in Missouri public schools will acquire the knowledge and skills to gather, analyze and apply information and ideas.

Students will demonstrate within and integrate across all content areas the ability to

- 1.1 develop questions and ideas to initiate and refine research
- 1.2 conduct research to answer questions and evaluate information and ideas
- 1.3 design and conduct field and laboratory investigations to study nature and society
- 1.4 use technological tools and other resources to locate, select and organize information
- 1.5 comprehend and evaluate written, visual and oral presentations and works
- 1.6 discover and evaluate patterns and relationships in information, ideas and structures
- 1.7 evaluate the accuracy of information and the reliability of its sources
- 1.8 organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation
- 1.9 identify, analyze and compare the institutions, traditions and art forms of past and present societies
- 1.10 apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers

GOAL 2: Students in Missouri public schools will acquire the knowledge and skills to communicate effectively within and beyond the classroom.

Students will demonstrate within and integrate across all content areas the ability to

- 2.1 plan and make written, oral and visual presentations for a variety of purposes and audiences
- 2.2 review and revise communications to improve accuracy and clarity
- 2.3 exchange information, questions and ideas while recognizing the perspectives of others
- 2.4 present perceptions and ideas regarding works of the arts, humanities and sciences
- 2.5 perform or produce works in the fine and practical arts
- 2.6 apply communication techniques to the job search and to the workplace
- 2.7 use technological tools to exchange information and ideas

GOAL 3: Students in Missouri public schools will acquire the knowledge and skills to recognize and solve problems.

Students will demonstrate within and integrate across all content areas the ability to

- 3.1 identify problems and define their scope and elements
- 3.2 develop and apply strategies based on ways others have prevented or solved problems
- 3.3 develop and apply strategies based on one's own experience in preventing or solving problems
- 3.4 evaluate the processes used in recognizing and solving problems
- 3.5 reason inductively from a set of specific facts and deductively from general premises
- 3.6 examine problems and proposed solutions from multiple perspectives
- 3.7 evaluate the extent to which a strategy addresses the problem
- 3.8 assess costs, benefits and other consequences of proposed solutions

GOAL 4: Students in Missouri public schools will acquire the knowledge and skills to make decisions and act as responsible members of society.

Students will demonstrate within and integrate across all content areas the ability to

- 4.1 explain reasoning and identify information used to support decisions
- 4.2 understand and apply the rights and responsibilities of citizenship in Missouri and the United States
- 4.3 analyze the duties and responsibilities of individuals in societies
- 4.4 recognize and practice honesty and integrity in academic work and in the workplace
- 4.5 develop, monitor and revise plans of action to meet deadlines and accomplish goals
- 4.6 identify tasks that require a coordinated effort and work with others to complete those tasks
- 4.7 identify and apply practices that preserve and enhance the safety and health of self and others
- 4.8 explore, prepare for and seek educational and job opportunities

KNOWLEDGE (CONTENT) STANDARDS

Communication Arts

In Communication Arts, students in Missouri public schools will acquire a solid foundation that includes knowledge of and proficiency in

- CA 1 speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization)
- CA 2 reading and evaluating fiction, poetry and drama
- CA 3 reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
- CA 4 writing formally (such as reports, narratives, essays) and informally (such as outlines, notes)
- CA 5 comprehending and evaluating the content and artistic aspects of oral and visual presentations (such as storytelling, debates, lectures, multimedia productions)
- CA 6 participating in formal and informal presentations and discussions of issues and ideas
- CA 7 identifying and evaluating relationships between language and culture

Fine Arts

In Fine Arts, students in Missouri public schools will acquire a solid foundation that includes knowledge of

- FA 1 process and techniques for the production, exhibition or performance of one or more of the visual or performed arts
- FA 2 the principles and elements of different art forms
- FA 3 the vocabulary to explain perceptions about and evaluations of works in dance, music, theater and visual arts
- FA 4 interrelationships of visual and performing arts and the relationships of the arts to other disciplines
- FA 5 visual and performing arts in historical and cultural contexts

Health/Physical Education

In Health/Physical Education, students in Missouri public schools will acquire a solid foundation that includes knowledge of

- HP 1 structures of, functions of, and relationships among human body systems
- HP 2 principles and practices of physical and mental health (such as personal health habits, nutrition, stress management)
- HP 3 diseases and methods for prevention, treatment and control
- HP 4 principles of movement and physical fitness
- HP 5 methods used to assess health, reduce risk factors, and avoid high risk behaviors (such as violence, tobacco, alcohol and other drug use)
- HP 6 consumer health issues (such as the effects of mass media and technologies on safety and health)
- HP 7 responses to emergency situations

Mathematics

In Mathematics, students in Missouri public schools will acquire a solid foundation that includes knowledge of

- MA 1 addition, subtraction, multiplication and division; other number sense, including numeration and estimation; and the application of these operations and concepts in the workplace and other situations
- MA 2 geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes
- MA 3 data analysis, probability and statistics
- MA 4 patterns and relationships within and among functions and algebraic, geometric and trigonometric concepts
- MA 5 mathematical systems (including real numbers, whole numbers, integers, fractions), geometry, and number theory (including primes, factors, multiples)
- MA 6 discrete mathematics (such as graph theory, counting techniques, matrices)

Science

In Science, students in Missouri public schools will acquire a solid foundation that includes knowledge of

- SC 1 properties and principles of matter and energy
- SC 2 properties and principles of force and motion
- SC 3 characteristics and interactions of living organisms
- SC 4 changes in ecosystems and interactions of organisms with their environments
- SC 5 processes (such as plate movement, water cycle, airflow), and interactions of Earth's biosphere, atmosphere, lithosphere, and hydrosphere
- SC 6 composition and structure of the universe and the motions of the objects within it
- SC 7 processes of scientific inquiry (such as formulating and testing hypotheses)
- SC 8 impact of science, technology, and human activity on resources and the environment

Social Studies

In Social Studies, students in Missouri public schools will acquire a solid foundation that includes knowledge of

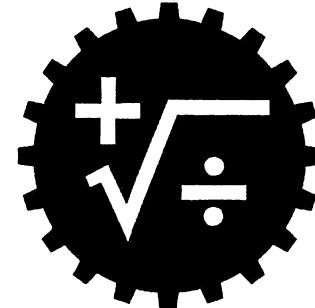
- SS 1 principles expressed in the documents shaping constitutional democracy in the United States
- SS 2 continuity and change in the history of Missouri, the United States and the world
- SS 3 principles and processes of governance systems
- SS 4 economic concepts (including productivity and the market system) and principles (including the laws of supply and demand)
- SS 5 the major elements of geographical study and analysis (such as location, place, movement, regions) and their relationships to changes in society and environment
- SS 6 relationships of the individual and groups to institutions and cultural traditions
- SS 7 the use of tools of social science inquiry (such as surveys, statistics, maps, documents)

CURRICULUM FRAMEWORKS**Number of Strand****Name of Strand****MATHEMATICS K-4****I. Problem Solving**

What All Students Should Know	What All Students Should Be Able To Do	Sample Learning Activities
<p><i>By the end of grade 4, all students should know</i></p> <ol style="list-style-type: none"> 1. A variety of problem-solving strategies (such as making a list, drawing a picture, looking for a pattern, acting out the problem). 2. Computational strategies with whole numbers (addition, subtraction, multiplication and division). 3. When to use concrete objects, calculators, computers, charts, graphs, etc., to organize and solve problems. 4. Mathematical problem-solving strategies can apply to all disciplines and real-world problems. 	<p><i>By the end of grade 4, all students should be able to</i></p> <ol style="list-style-type: none"> a. work individually and with others to use problem-solving approaches to investigate and understand mathematical content (NCTM Standard 1; MO 1.6, 3.5, 3.6, 4.6) b. use problem solving strategies to construct meaning from mathematical tasks (NCTM Standard 1; MO 1.6, 3.7) c. recognize and define theoretical and actual problems encountered in everyday life, mathematical situations, and various disciplines (NCTM Standard 1; MO 3.1, 3.4) d. develop and apply strategies to pre-solve a wide variety of problems (NCTM Standard 1; MO 3.2, 3.3) e. verify, interpret, and evaluate whether a solution addresses the original problem (NCTM Standard 1; MO 2.2, 3.6, 3.7, 3.8) f. select and apply appropriate mathematical tools and technology to solve problems (NCTM Standard 1; MO 2.7) 	<p>NOTE: Each item in this column is designed to address several elements of "what all students should know" and "what all students should be able to do." The activities may also relate to strands other than problem-solving.</p> <ul style="list-style-type: none"> • Given objects and/or pictures that have a variety of attributes such as shapes, colors, and sizes, devise a rule for sorting. Sort the objects and/or pictures using that rule. In spoken or written form explain the rule used (for example, "I put the blue ones together" or "all the big ones belong here.") • Sort or classify a set of three-dimensional objects (such as blocks, soup cans, cereal boxes) by common attributes (including sides, ability to roll, and size). • Given a menu from a fast-food restaurant, list five ways that you and a friend could eat for \$5.00. Compute the cost of each of the five ways.

MATHEMATICS K-4**Show-Me Performance
(Process) Standards****"To Know" Statements****"To Do" Statements****Optional Sample
Learning Activities**

I. Problem Solving



K-12 Content Overview

"Problem solving should be the central focus of the mathematics curriculum. As such, it is a primary goal of all mathematics instruction and an integral part of all mathematics activity. Problem solving is not a distinct topic but a process that should permeate the entire program and provide the context in which concepts and skills can be learned." (NCTM Standards, 1989) Posing and solving problems should be the major focus of all students' mathematical activity so that through working with interesting, engaging, and intellectually stimulating situations, they come to understand mathematics and use it effectively.

Experiences should be such that students use discovery-oriented, inquiry-based and problem-centered approaches to investigate and understand mathematics. Students should be able to recognize, formulate, clarify and engage in solving problems arising from mathematical situations, everyday experiences, applications to other disciplines, and real-world applications.

I. Problem Solving

What All Students Should Know	What All Students Should Be Able To Do	Sample Learning Activities
<p><i>By the end of grade 4, all students should know</i></p> <ol style="list-style-type: none"> 1. A variety of problem-solving strategies (such as making a list, drawing a picture, looking for a pattern, acting out the problem). 2. Computational strategies with whole numbers (addition, subtraction, multiplication and division). 3. When to use concrete objects, calculators, computers, charts, graphs, etc., to organize and solve problems. 4. Mathematical problem-solving strategies can apply to all disciplines and real-world problems. 	<p>NOTE: Each item in this column is designed to address several elements of “what all students should be able to do.”</p> <p><i>By the end of grade 4, all students should be able to</i></p> <ol style="list-style-type: none"> a. work individually and with others to use problem-solving approaches to investigate and understand mathematical content (NCTM Standard 1; MO 1.6, 3.5, 3.6, 4.6) b. use problem solving strategies to construct meaning from mathematical tasks (NCTM Standard 1; MO 1.6, 3.7) c. recognize and define theoretical and actual problems encountered in everyday life, mathematical situations, and various disciplines (NCTM Standard 1; MO 3.1, 3.4) d. develop and apply strategies to predict, prevent, and solve a wide variety of problems (NCTM Standard 1; MO 3.2, 3.3) e. verify, interpret, and evaluate whether a solution addresses the original problem (NCTM Standard 1; MO 2.2, 3.6, 3.7, 3.8) f. select and apply appropriate mathematical tools and technology to solve problems (NCTM Standard 1; MO 2.7) 	<p>NOTE: Each activity is designed to address several items from “what all students should know” and “what all students should be able to do.” The activities may also relate to strands other than problem-solving.</p> <ul style="list-style-type: none"> • Given objects and/or pictures that have a variety of attributes such as shapes, colors, and sizes, devise a rule for sorting. Sort the objects and/or pictures using that rule. In spoken or written form explain the rule used (for example, “I put the blue ones together” or “all the big ones belong here.”). • Sort or classify a set of three-dimensional objects (such as blocks, soup cans, cereal boxes) by common attributes (including sides, ability to roll, and size). • Given a menu from a fast-food restaurant, list five ways that you and a friend could eat for \$5.00. Compute the cost of each of the five ways.

MATHEMATICS K-4**I. Problem Solving**

What All Students Should Know	What All Students Should Be Able To Do	Sample Learning Activities
		<ul style="list-style-type: none">• Boxes of the same height are stacked on top of each other in a storeroom. A first set of boxes is 8 inches high, a second set of boxes is 12 inches high, and a third set of boxes is 16 inches high. Design a strategy to determine the height when the tops of all the boxes are even. The height of the storeroom is 10 feet. Is there more than one time when the tops of the boxes would be the same height? Justify your answer.• Given an advertisement from a local toy store, write a story problem that could be solved using both addition and subtraction. Solve the problem.• Put six small counters under one hand, and without looking, move four of them into view. Can you figure out how many are still under your hand? Share your solution with a classmate.

I. Problem Solving

What All Students Should Know	What All Students Should Be Able To Do	Sample Learning Activities
<p><i>By the end of grade 8, all students should know</i></p> <ol style="list-style-type: none"> 1. A variety of problem-solving strategies (such as organizing data, drawing a picture, looking for a pattern, writing an expression using a variable). 2. Computational strategies with whole numbers, decimals, fractions, and integers. 3. Models, calculators, computers, charts, and graphs may be used to organize and solve problems. 4. Mathematical problem-solving strategies can apply to all disciplines and real-world problems. 	<p>NOTE: Each item in this column is designed to address several elements of “what all students should be able to do.”</p> <p><i>By the end of grade 8, all students should be able to</i></p> <ol style="list-style-type: none"> a. use problem-solving approaches to explore and construct meaning from mathematical content (NCTM Standard 1; MO 1.6, 3.4, 3.5, 3.7) b. pose authentic problems within and outside the field of mathematics (NCTM Standard 1; MO 2.1, 3.1, 3.4, 3.6) c. develop and apply strategies to solve problems, with emphasis on multistep and non-routine problems (NCTM Standard 1; MO 1.8, 3.2, 3.3) d. analyze, evaluate, and verify results with respect to the original problem (NCTM Standard 1; MO 2.2, 3.7, 3.8) e. transfer strategies to similar problems (NCTM Standard 1; MO 3.2, 3.3, 3.6) 	<p>NOTE: Each activity is designed to address several items from “what all students should know” and “what all students should be able to do.” The activities may also relate to strands other than problem-solving.</p> <ul style="list-style-type: none"> • Identify a fast-food restaurant that offers a “Value Meal” combo. Investigate the restaurant’s prices to determine whether the “Value Meal” or a \$1.00 off coupon (purchasing the same items) is a better deal. Determine your city’s sales tax rate, how the tax is added to the dollar total, and decide if this additional cost affects your solution. • Consider the days of the month as “even” days and “odd” days (for example, Jan. 1 is “odd,” Jan. 2 is “even”). If you received \$1.00 on “odd” days and 50 cents on “even” days, on which day would you have accumulated \$50? Explain your process. List the patterns you see in finding the \$50 solution. Describe a general rule to determine the amount of money accumulated given a date. • Given a 30 cm by 30 cm grid sheet, find the largest volume possible if you were to make an open-ended box (five sides with the top open). Make a chart showing the results of your investigations. Once the largest volume is found, be prepared to justify the results. Change the original grid sheet size, such as, 20 by 20, 20 by 30, and look for patterns in the results. Determine a general rule to describe the results.

**MATHEMATICS
5-8****I. Problem Solving**

What All Students Should Know	What All Students Should Be Able To Do	Sample Learning Activities
		<ul style="list-style-type: none"> • Create a scale model of your mathematics classroom. Determine the total area of the room that can be painted. Explain how you would determine the amount of wall space that is to be painted. Investigate the amount of paint necessary to appropriately cover an interior wall. Calculate the number of cans of paint necessary to cover the walls in your mathematics classroom. Estimate the amount of paint necessary to paint another classroom in your school. Can you use your original calculations to estimate the amount of paint needed to paint the interior of your entire school? Explain your reasoning. • A national magazine, "Middle Schoolers R Us," has reported that an 8th grader's potential walking speed is determined by his/her height. Develop a method to test this claim. Conduct the appropriate experiments, then prepare a report of your results. The report should include charts and graphs in addition to the calculations justifying the conclusions. Assuming that speed is a function of height and this is a linear relationship, consider the following: (1) A new student (e.g., Slim Pickens, height 6'5") enrolls in your school. Determine his speed potential. (2) Explain whether a speed of 0 is realistic. (3) Investigate the real-world realistic values for height (domain) and the real-world realistic values for speed (range). Then justify your conclusions. • Plan a home-cooked meal and a similar meal from a fast-food restaurant. Determine which meal is healthier based on nutritional value (percent of fat, percent of salt, etc.). Determine the cost of each meal. Justify whether you should eat out or eat the home-cooked meal.

I. Problem Solving

What All Students Should Know	What All Students Should Be Able To Do	Sample Learning Activities
<p><i>By the end of grade 12, all students should know</i></p> <ol style="list-style-type: none"> 1. Problem-solving strategies such as organizing data, drawing a picture, looking for a pattern, modeling, researching, and algebraic strategies. 2. Computational strategies for the set of real numbers. 3. Models, calculators, computers, charts, graphs, etc., may be used as problem-solving tools. 4. Mathematical problem-solving strategies can apply to all disciplines and real-world problems. 	<p>NOTE: Each item in this column is designed to address several elements of “what all students should be able to do.”</p> <p><i>By the end of grade 12, all students should be able to</i></p> <ol style="list-style-type: none"> a. use problem-solving strategies to investigate and understand mathematical content (NCTM Standard 1; MO 1.6, 3.5) b. recognize and formulate problems from situations within and outside mathematics (NCTM Standard 1; MO 3.1, 3.5) c. organize, develop and apply integrated mathematical problem-solving strategies to solve problems within and outside mathematics (NCTM Standard 1; MO 3.2, 3.3) d. apply the process of mathematical modeling to real-world problem situations (NCTM Standard 1; MO 2.1, 3.6) e. analyze, evaluate, and reflect upon the process(es) used in solving problems (NCTM Standard 1; MO 2.2, 3.4, 3.6, 3.7, 3.8) 	<p>NOTE: Each activity is designed to address several items from “what all students should know” and “what all students should be able to do.” The activities may also relate to strands other than problem-solving.</p> <ul style="list-style-type: none"> • Develop a way to enhance the marketability of a concert, including the number, cost, and types of tickets sold. • Develop a brochure and a cost analysis to be used by a sales force for selling tour packages with options. • Create a game for a Mathematics Carnival. Investigate and justify the mathematical principles involved in the game. • Design a procedure to examine the cost-effectiveness of games for a Mathematics Carnival. • Compare and contrast the mathematics and methods used for solving similar problems from different eras. • Given a limited budget, calculate the cost of all materials needed to build a garage, an addition to a room, or a renovation. Create an itemized list of the amount and cost of the materials needed for the project. Specify and justify the dimensions of the garage or the added room or the renovation. • Estimate the amount of concrete needed for a sidewalk 10 feet long. Describe how you determined your estimate.

SAMPLE ASSESSMENT

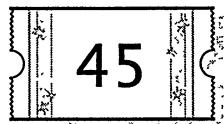
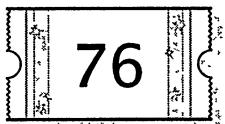


Directions

Numbers 1 through 6 are about a fundraiser at George Washington Carver School.
Show all of your work and write your answers directly in this booklet.

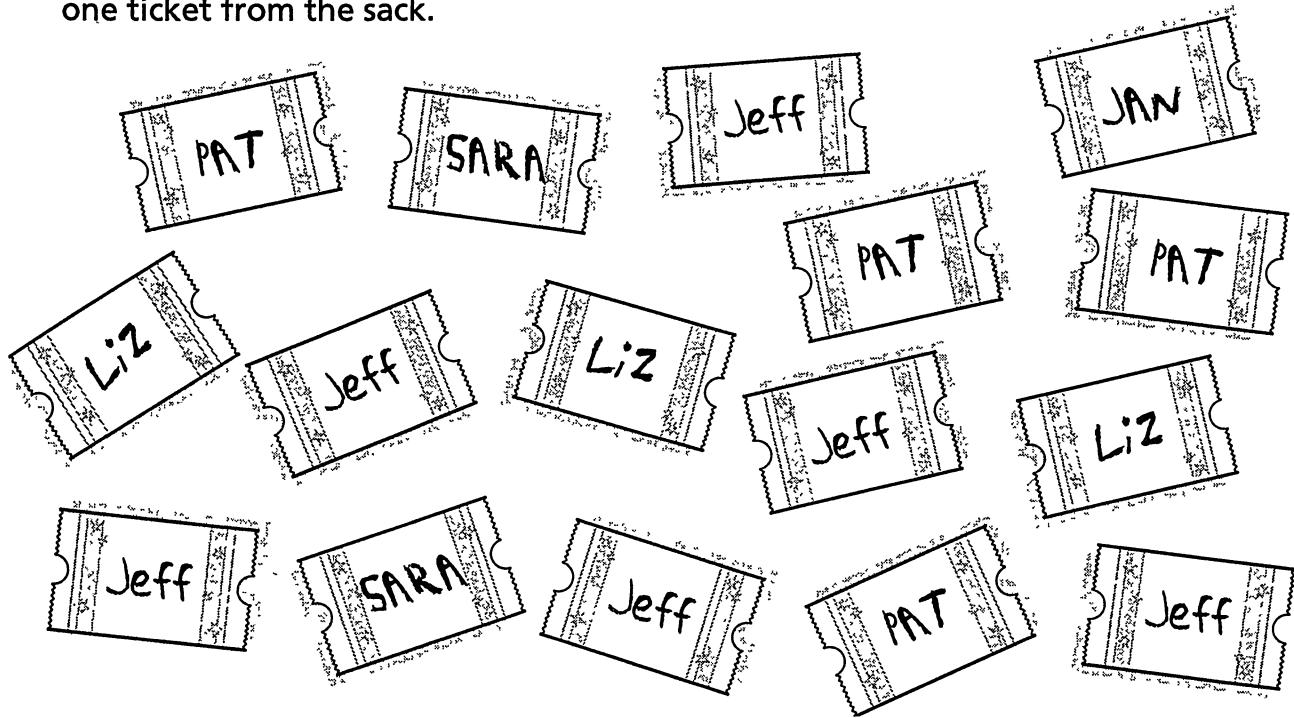


Leon bought these 5 tickets for a fundraiser. Draw a circle around each number that is a multiple of 5.



2

In one class some students wrote their names on the backs of their tickets. These 16 tickets were put into a sack. Without looking, the teacher chose one ticket from the sack.



Which name would have the **best** chance of being chosen?

In the box below, explain why the name you wrote has the best chance of being chosen.

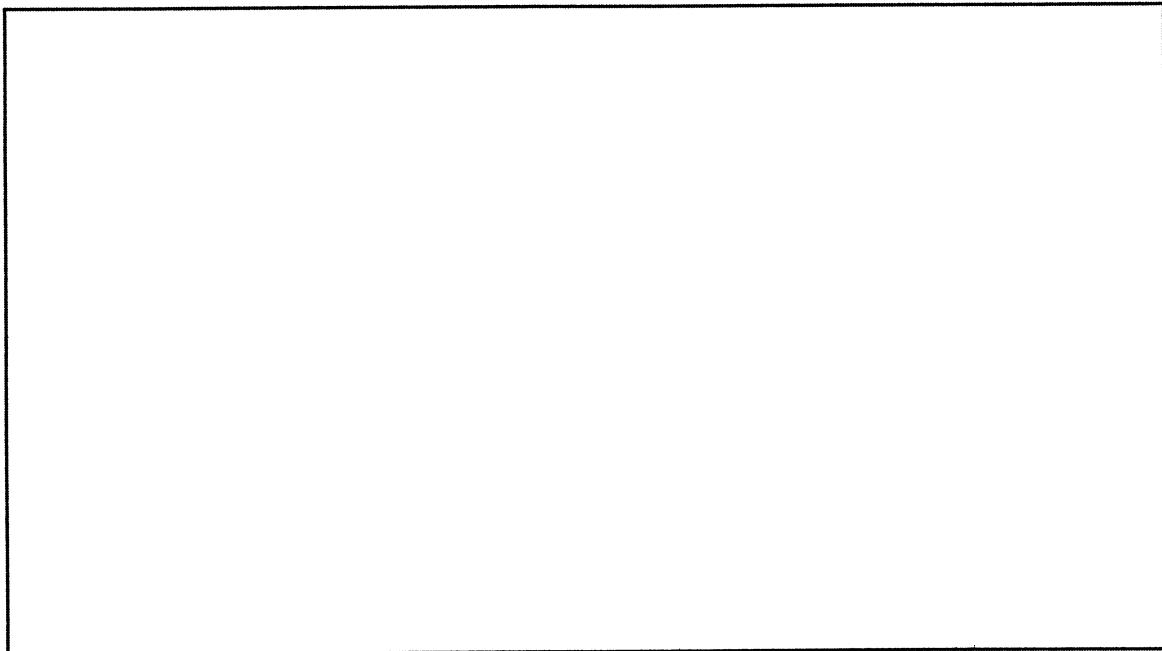
3

On Monday Jim sold 6 tickets. On Tuesday he sold 12 tickets, and on Wednesday he sold 18 tickets.

If Jim continues this pattern, how many tickets will he sell on *Friday*?

_____ tickets

In the box below, use pictures or words to show how you solved the problem.



4

Three prizes were awarded to the students who earned the most money selling tickets. Look at the list of students and their amounts earned shown below.

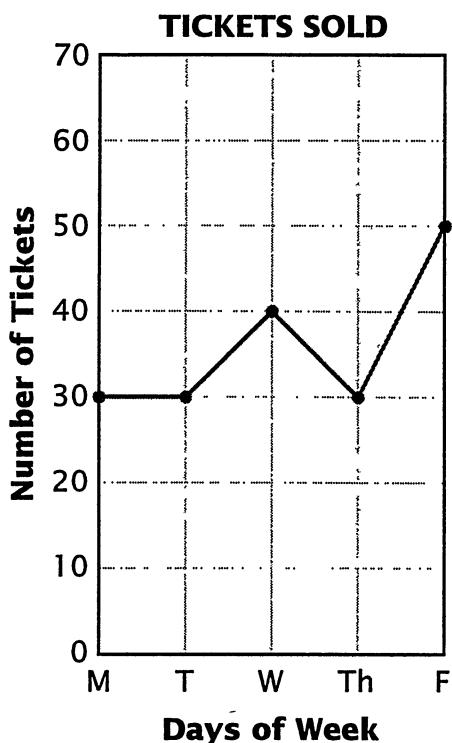
Name of Student	Amount Earned
Amy	\$9.75
Jana	\$8.00
Jim	\$4.50
Emelio	\$12.25
Paula	\$9.50
Reggie	\$10.50
India	\$9.50

Fill in all the boxes below to show the names of the students who won 1st, 2nd, and 3rd prize in ticket sales along with the amounts earned.

	Name of Student	Amount Earned
1st Prize		
2nd Prize		
3rd Prize		

5

Ms. Lee's class made the line graph below to show the number of tickets sold by their class in one week.



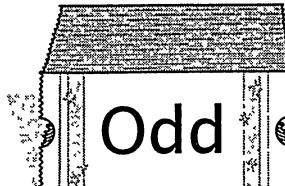
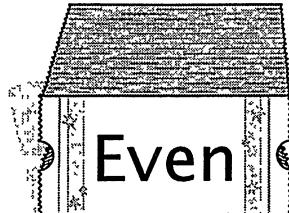
How many tickets were sold on Wednesday?

_____ tickets

In the box below, write a sentence comparing the number of tickets sold on Monday to the number of tickets sold on Friday.

6

Alex has 2 stacks of tickets. One stack of tickets has all even numbers and the other has all odd numbers. Together there are 35 tickets. There are 5 more even-numbered tickets than odd-numbered tickets.



How many tickets are in the stack of even-numbered tickets?

_____ tickets

How many tickets are in the stack of odd-numbered tickets?

_____ tickets

In the box below, explain how you found your answer.

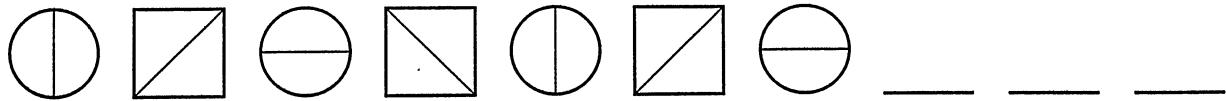
Math Journal

Directions

Mrs. Peterson's 4th-grade class is keeping a math journal. Numbers 7 through 12 are about the journal. Show all of your work and write your answers directly in this booklet.



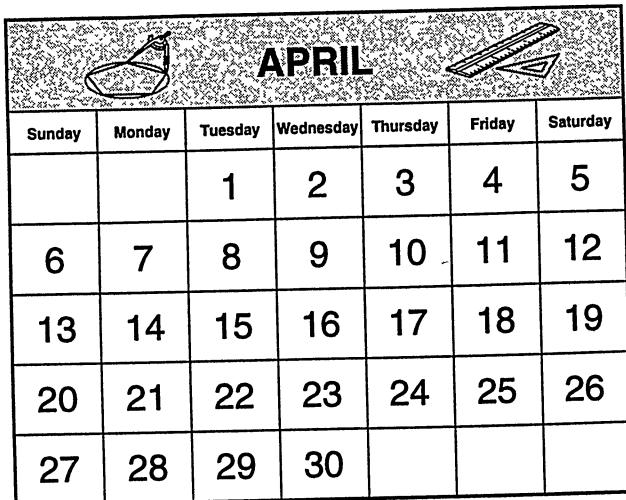
Larry drew the pattern below on the cover of his math journal.



Finish the pattern by drawing the next 3 shapes on the lines above.

Directions

Use the calendar below to do Numbers 8 and 9.



A calendar for the month of April. The days of the week are labeled from Sunday to Saturday. The dates are as follows:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

8

The students will write in their math journals every Monday, Wednesday, and Thursday during the month of April.

On how many days *in all* will the students write in their journals?

_____ days

9

How many Mondays, Wednesdays, and Thursdays in April fall on even-numbered days?

_____ days

10



Use your pattern blocks to help you solve this problem.

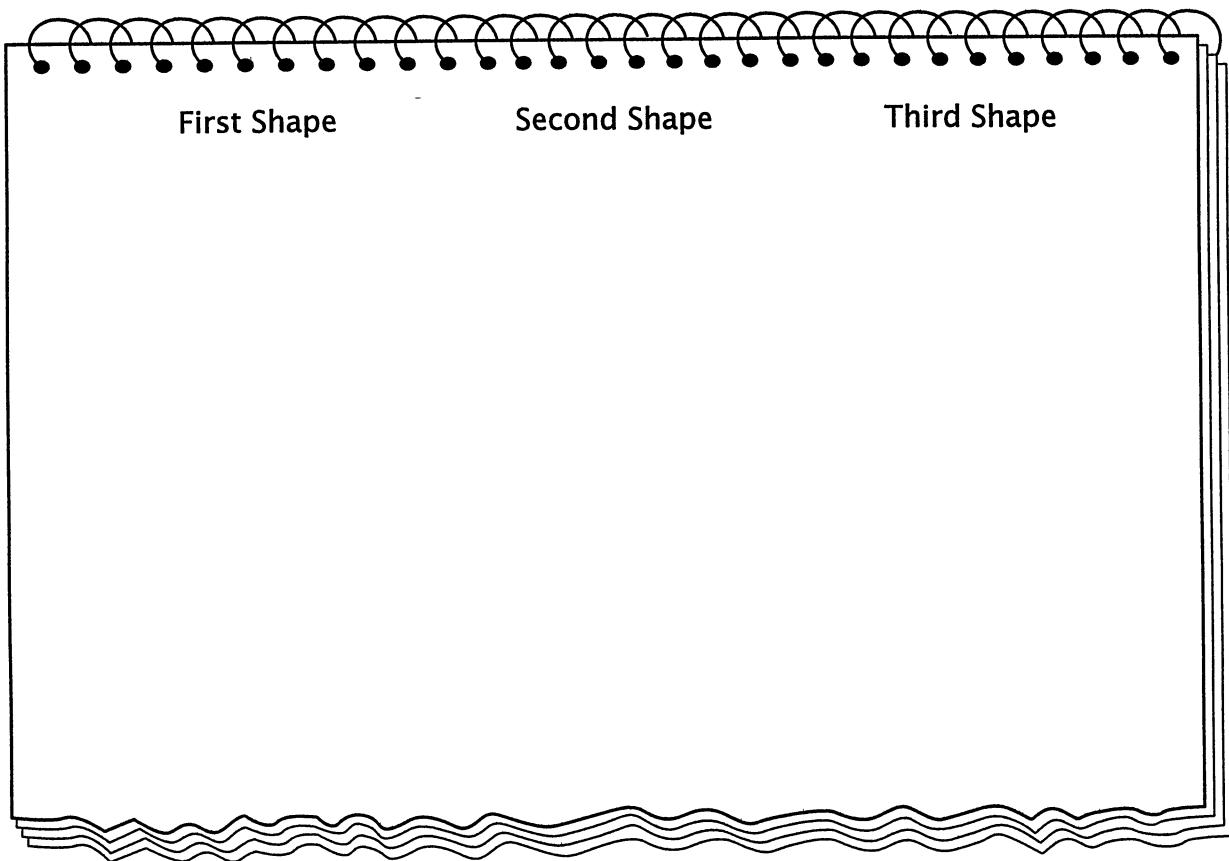
Tom traced around 3 pattern blocks to decorate the cover of his math journal.

The first shape he used has 4 sides and 4 corners. Only two of the sides are the same length.

The second shape has 3 equal sides and 3 corners.

The third shape has 6 equal sides and 6 corners.

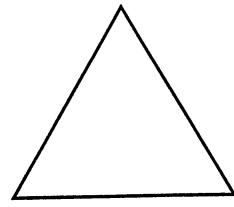
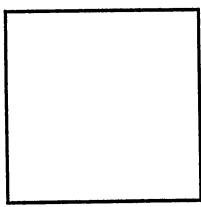
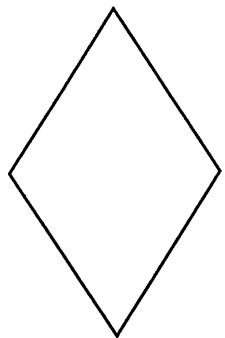
On the journal cover below, trace the pattern blocks Tom used to decorate his journal cover.



11

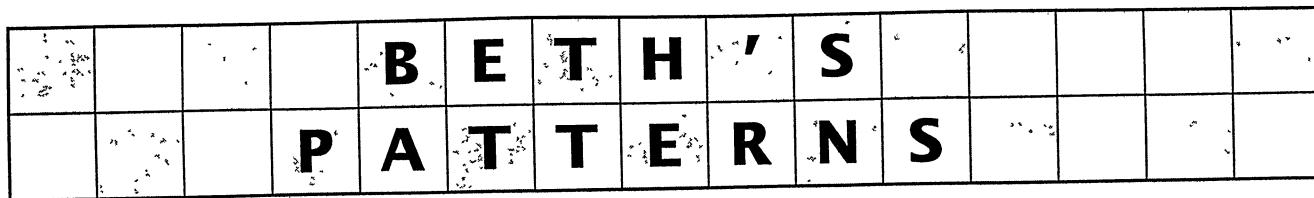
Use your pattern blocks to help you solve this problem.

Holly wants to use these 3 pattern blocks to decorate the cover of her journal. She puts the blocks in the order shown below.



Now Holly wants to put the blocks in different orders. How many *different* ways in all can she order these 3 blocks?

_____ ways



Directions

Show all of your work and write your answers directly in this booklet.

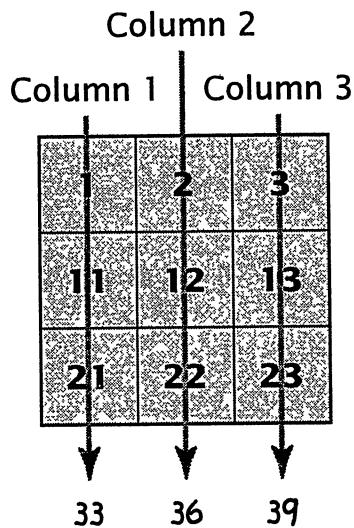
13

Look at the Number Chart below. Beth chose the 3 by 3 square that is shaded.

NUMBER CHART

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

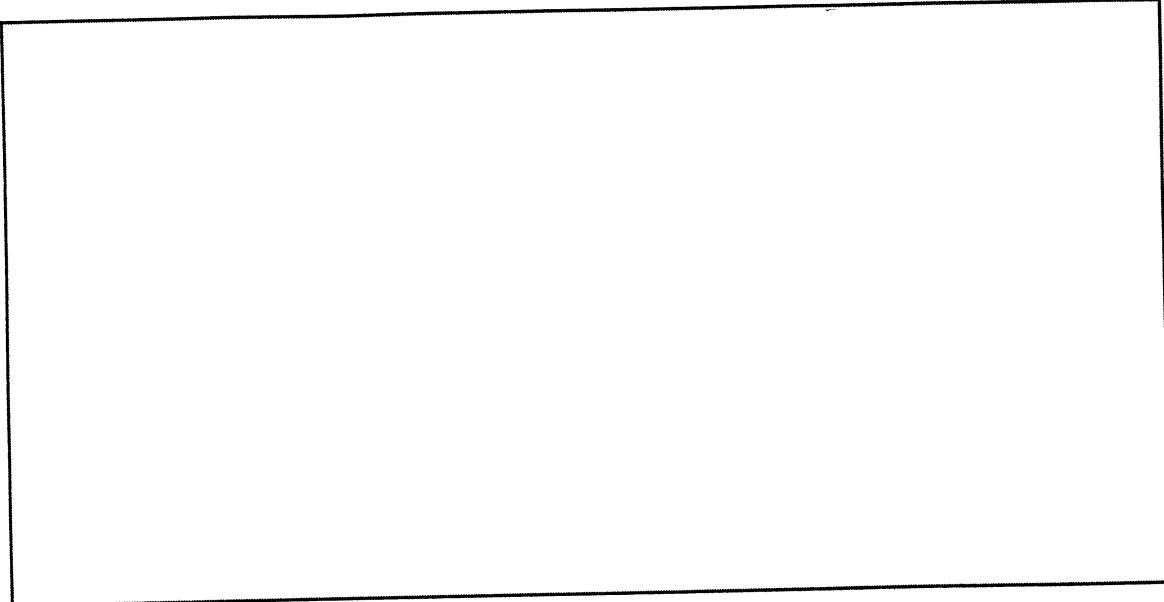
She added the numbers in each column like this.



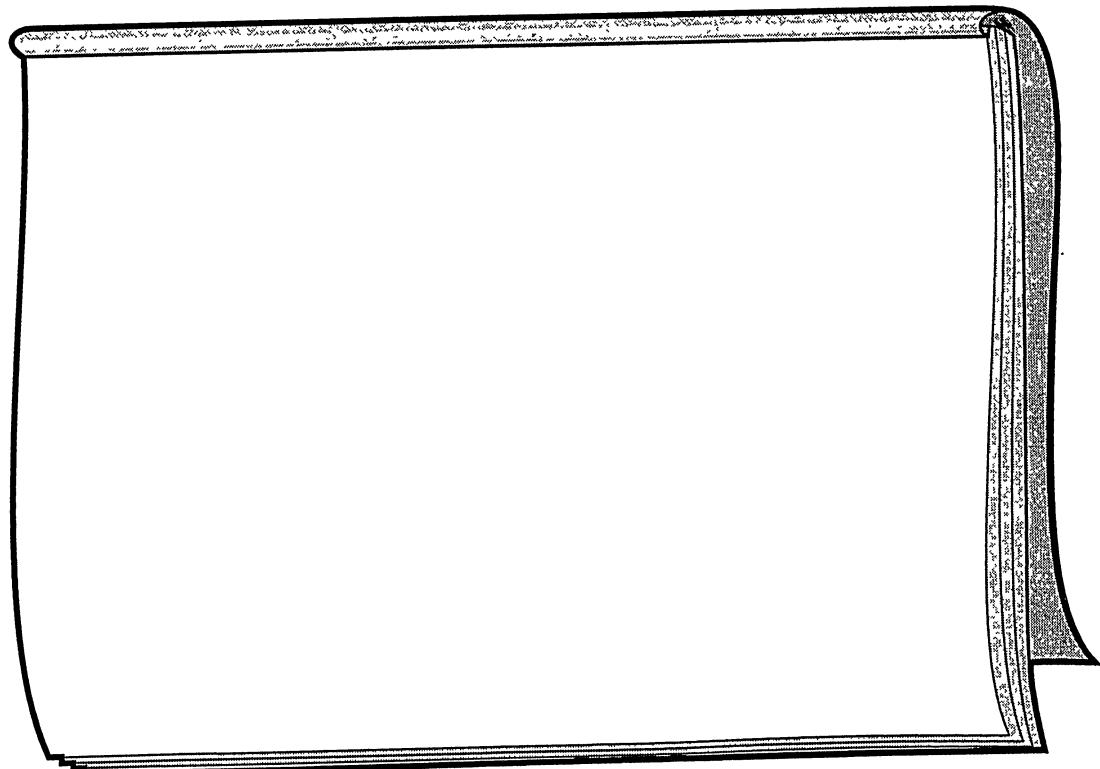
Beth looked at the sum of each column. The pattern for the sums of the 3 columns increased by 3 each time.

Beth tells you that the pattern for the sums will be different if you choose another 3 by 3 square. Is Beth correct? Show how you found out.

Would the pattern for the sums change if you chose a 4 by 4 square? Explain the pattern for 4 by 4 squares.



Write a note to Beth on the notepad below. Predict what the pattern for the sums will be for a 10 by 10 square. Explain the reasoning you used in making your prediction.





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